Commonwealth of Kentucky
Division for Air Quality

REVEISED PERMIT APPLICATION SUMMARY FORM

Completed by: Massoud Kayvanjah

GENERAL INFORMATION:

Name:	Kingsford Manufacturing Company
Address:	9500 South Highway 27 Burnside, KY 42519
Date application received:	5/5/2008
SIC Code/SIC description:	2861, Charcoal manufacturing
Source ID:	21-199-00018
Agency Interest:	3816
Activity:	APE20080001
Permit:	V-08-016

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance
[ ] Permit modification
__Administrative
__Minor
__Significant
[x] Permit renewal
[ ] General permit
[ ] Conditional major
[ ] Title V
[ ] Synthetic minor
[ ] Operating
[ ] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[ ] Compliance certification signed
[ ] Compliance schedule included

APPLICABLE REQUIREMENTS LIST:

[ ] NSR
[ ] PSD
[ ] Netted out of PSD/NSR
[x] NSPS
[ ] NESHAPS
[ ] Not major modification per 401 KAR 51:001, 1(116)(b)
[x] SIP
[ ] Other

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[ ] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[ ] Certified by responsible official
[ ] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential (tpy)
PM	375	492
PM_{10}	133.5	334
VOC	213	215
CO	32	38.5
SO_2	192	212
NOx	377	453

SOURCE DESCRIPTION:

On May 5, 2008, Kingsford Manufacturing Company (KMC) at Burnside applied to the Division for the renewal of their permit V-03-018 R3. KMC manufactures charcoal briquets mixed with additives (Limestone, Starch, and Solvent).

The facility is classified as a Title V major source of air pollution based on emissions of more than 100 tons per year of particulate matter less than 10 micrometers (PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_x), and volatile organic compounds (VOC).

A minor modification was received from KMC on July 1, 2007 and a revised version on September 26, 2008 for the solvent briquette (STB) production line. This modification is to improve the process capability, product application accuracy, increase the volume of the solvent dip tank, increase briquette optimal residence time and add additional coating devices at the dip tank exit. Also a portion of the circulating solvent will be returned and allowed to flow into the briquets. The centrifuge system will be replaced with an alternative system to improve the recycling system's reliability. Weighing belts will be installed at the inlet and the outlet of the solvent dip tank to more accurately measure the solvent content of the briquets produced at the STB line. In order to minimize emissions, the facility will utilize a chiller to maintain the solvent temperature in the dip tank below 50^{o}F as required in the existing TV operating permit. The exhaust fumes from the STB line are routed to the ACC, which provides a residence time of 20 second at temperatures greater than 1400^{o}F. Potential emissions of volatile organic compounds (VOC) from the proposed project do not exceed the significant emission rate per 401 KAR 51:001, Section 1(224), because the total is 36 tons per year. Based on actual to projected actual analysis in 401 KAR 51:017, Section 1 (4)(a)1, a projected actual annual STB production will increase by a maximum of 30, 367 tons over the next five years. The baseline actual is computed as the average of 2006 and 2007 years, and the projected actual based on STB production anticipated rate for the next five year period following the modification between 2008 and 2012 period, which is detailed in the tables B1 through B3 below. The modification does not change the emission limitation in the permit

Table B1

Source	STB Production (tons/yr)	VOC Emissions (tons/yr)
Baseline Actual Emissions		
2006	33,159	40.51
2007	33,050	40.38
Average	33,105	40.45
Projected Actual Emissions		
36 tpy VOC increase	63,471	76.45
Net Increases		
Actual to Projected Actual	30,367	36.00
PSD Significance Levels		40

Baseline actual emissions are the average of actual 2006/2007emission rates.

Table B2

Year	Source	STB[a] Production (tons/yr)	VOC Emission Factor[b] (lbs/ton)	VOC Emissions (tons/yr)
2006	STB Application (Controlled)	33,159	0.141	2.34
	STB fines	33,159	2.23	36.97
	Tanks & Piping	N/D	N/D	1.2
	Total			40.51
2007	STB Application (Controlled)	33,050	0.141	2.33
	STB fines	33,050	2.23	36.85
	Tanks & Piping	N/D	N/D	1.2
	Total			40.38

a. STB production rates reflect "wet briquets" (with solvent weight included).

b. Emissions
Controlled solvent application emissions based on 95% control of VOC emissions by the ACC.
Uncontrolled emissions from solvent application (2.82 pounds VOC/ton STB) per KMC operating experience with similar STB production operations.
Tanks and piping VOC emissions assumed to be fixed and independent of production rate per KMC operating experience with similar STB production operations.
"STB Fines" are fugitive VOC emissions associated with STB briquet fines handling. Most of these emissions are assumed to occur at the briquet dryers during fines reprocessing (EU07, 08, 09)

Table B3

Operating Scenario	Source	STB[a] Production	VOC Emission Factor[b]	VOC Emissions
		(tons/yr)	(lbs/ton)	(tons/yr)
36 tpy VOC Increase	STB Application Area	63,471	0.141	4.47
	STB fines	63,471	2.23	70.77
	Tanks & Piping	N/D	N/D	1.2
	Total			76.45

a. STB production rates reflect "wet briquets" (with solvent weight included).

b. Emissions
Controlled solvent application emissions based on 95% control of VOC emissions by the ACC.
Uncontrolled emissions from solvent application (2.82 pounds VOC/ton STB) per KMC operating experience with similar STB production operations.
Tanks and piping VOC emissions assumed to be fixed and independent of production rate per KMC operating experience with similar STB production operations.
"STB Fines" are fugitive VOC emissions associated with STB briquet fines handling. Most of these emissions are assumed to occur at the briquet dryers during fines reprocessing (EU07, 08, 09)
KMC shall maintain records of STB production and of annual emissions from STB production to demonstrate that the actual emissions over the 2008-2012 periods do not exceed the maximum projected annual emissions shown in the table above. The annual emission inventory shall be used to provide the Division actual annual VOC emission rates from the STB process for the 5 year period following the modification to the solvent application area.

EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

Pursuant to 401 KAR 51:017, total volatile organic compound emissions from emissions units 07, 08, and 09 shall not exceed 51.9 lbs/hour averaged on a daily basis and 169.3 tons in any consecutive twelve months period. The permittee may assure compliance with this emission limitation by demonstrating compliance with the solvent usages rate as defined in the permit.

Pursuant to 401 KAR 51:017, the wet wood dryer and retort furnace shall be operated with a maximum of 80% of emissions going out the ACC stack and a minimum of 20% of emissions cycling to the briquets dryers and waste heat boiler. Emissions into the open air from the ACC stack shall not exceed the following limits:

1) 60.60 lbs/hr of PM
2) 48.48 lbs/hr of PM_{10}
3) 92.71 lbs/hr of NO_x
4) 24.24 lbs/hr of SO_2
5) 7.13 lbs/hr of VOC

Under circumstances when 20% of the total flow of emissions cannot be diverted to the briquets dryers (greater than 80% of total flow out the ACC stack), the maximum throughput of wet wood to the rotary dryer shall not exceed 62.6 tons/hr, and the maximum throughput of dry wood to the retort furnace rate shall not exceed 31.3 tons/hr to comply with KAR 59:010.
Pursuant to 401 KAR 59:010, under operating conditions with greater than 80% of the emissions going out the ACC stack, the process rate shall be limited so that the particulate matter emissions into the open air shall not exceed:
Combined Allowable Rate of PM Emission in lb/hr = $17.31(P_1)^{0.16} + 17.31(P_2)^{0.16} = 63.02$ lb/hr, where the max $P_1 = 62.6 – (0.1)(62.6) = 56.34$, assuming 10% uncombined moisture in wet wood and the max $P_2 = 31.3$, from the combined emissions in the ACC unit.

Controls are to be operated at all times. The ACC combustion chamber shall be operated with an average (3-hour average) temperature greater than 1400°F.

OPERATIONAL FLEXIBILITY: NONE